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## REVIEWS AND NOTICES.

## MORTALITY EXPERIENCE.

Mortality Experience of the Australian Mutual Provident Society. 1849–88. Compiled by Richard Teece, F.I.A., Actuary and Manager.

This is a very complete and exhaustive analysis of the mortality experience of the largest Australian company, covering an aggregate of 114,471 lives. These statistics are of unusual interest to actuaries, owing to the fact that this company has been under an actuary as chief ranking officer and actual manager. The business man who is so prominent in American companies, and often so contemptuous about mere theorists, is relegated to the background. This actuary manager has dared to follow his nose, too, without troubling too much about the difference between theory and practice. The consequence is that the statistics under consideration deal with a variety of subjects not so common in compilations of this sort, because of the want of data.

Among these subjects are: the effect of an absolutely free surrender system on selection; the effect of classification of risks upon the mortality; the effect of initial selection, as shown by comparing the mortality for the first five years of insurance with the mortality of later years; the mortality of annuitants; the effect of maternity upon the mortality of females; the result of conscious selection of endowment insurance upon the mortality; the influence of occupation and nationality on the mortality; the mortality according to amounts at risk in comparison to lives; the rate of discontinuance as affected by the liberal surrender privileges; the mortality from various diseases.

The mortality of the company is low, though not lower than some American companies, which have not published their experience, claim to be experiencing. It is, however, lower than any experience which has been submitted to the scientific world, being an average of but  $67\frac{1}{2}$  per cent of the mortality according to the H<sup>III</sup> table. The experiment of insuring diseased lives, by adding to the actual age,

has been fairly successful, resulting in a mortality but very little in excess of the average. An exhibition of the principles upon which the company discriminated would be very instructive, and it is to be hoped that to this the medical officers will next turn their attention. The number of lives in this class is large, comprising fully one-third of the whole. The result of the conscious selection of endowment insurance by the best lives is found to be a diminished mortality. This is harmonious with the received ideas on that subject, and if by endowment insurance is meant any insurance which puts a premium on living, there would seem to be good sense in support of the statistics. Precisely contrary to received ideas is the effect of an absolutely free surrender system, coupled with most absolute non-forfeiture provisions; it is found that the effect is rather beneficial than otherwise, no adverse selection taking place. It is likewise found that a less surrender and lapse rate is experienced than in companies which discourage discontinuance under pain of forfeiture. This anomaly is perhaps explained by the fact that a man is permitted to borrow on favorable terms nearly as much as he can obtain upon surrender. As I have elsewhere pointed out, there is also good reason to believe that actuaries are counting too much on the reason of mankind in assuming that men will on the average act for their own interest; there is every reason to believe that the obstinacy of the average individual impels him to rebel against restraints which he considers unjust, and to be the more obstinate about it. The results of this investigation appear to confirm that view.

The mortality of women because of maternity was not found to be in excess of the greater mortality from other causes among males. The principal thing which stands in the way of the free insurance of women is the difficulty of securing a satisfactory examination, which difficulty seems likely to disappear now that so many women are entering the medical profession. The mortality from various diseases shows, as might be expected, a considerable variation from the American and English experiences. There is a lower percentage from consumption, a higher from intemperance and from violent deaths, which latter the medical officer ascribes to the newness of the country. The mortality among annuitants is found to be considerably lighter than among insurers, which agrees with all previous statistics. There seems to be good reason to conclude that native Australians are better lives than immigrants from other countries.

All in all, the compilation is very scholarly and instructive, and is a distinct advance in the matter of life insurance statistics. It also seems to prove conclusively the superiority of "theorists'" management.

MILES MENANDER DAWSON.

## BULLETINS OF THE CANADIAN CENSUS.

- No. 1. August, 1881. Preliminary Returns of Population.
- No. 2. October, 1891. Population of the Sub-Districts of the Province of Ontario.

Twenty-nine counties show an increase and twenty-one a decrease in population. The decreases are attributed (1) to the difference in the mode of counting the people. Severe rules were adopted to prevent duplications. A time limit in taking the census was adopted. There was far less duplication. (2) To the movement of population westward to the virgin soil, and from the country to the city. (3) To the introduction of agricultural machinery, which has done away to a certain extent with hired help. (4) To the denudation of the forests, which has driven out the lumbermen and mill hands. (5) To the opening up of 6000 miles of railway. (6) To the development of mining industries in Algonea and Nipissing, which has driven a considerable number from Ontario.

No. 3. November, 1891. Population of the Eastern Maritime Provinces.

The increase in these provinces was very slight between 1881 and 1891. The family is becoming smaller, due to the decrease of early marriages and increasing tendency to celibacy. This accounts, in a measure, for the small increase in population, for while the population increased 1.2 per cent the number of families increased 4.1 per cent.

- No. 4. December, 1891. Population of the Province of Quebec.

  The population increased 9.5 per cent and number of families 7 per cent.
- No. 5. February, 1892. Population of Manitoba, Northwest Territories, and British Columbia.